

CLAIMS

1. Connector system (1) of a connector (2) and a counterpart (4;5), said connector (2) comprising a pivotally supported locking arm (16) extending towards said counterpart (4;5), wherein said locking arm (16) comprises a first locking portion (17) adapted to engage with a second locking portion (22) of said counterpart (4;5) by a first rotating movement (R1) of said locking arm (16) to a locked position to lock said connector (2) and said counterpart (4;5) and to disengage from said second locking portion by a second rotating movement (R2) to an unlocked position to unlock said connector (2) and said counterpart (4;5)

characterized in that

said system (1) is adapted to support said locking arm (16) after said second rotating movement (R2) to prevent said locking arm (16) to rotate backwards to said locked position.

2. Connector system (1) according to claim 1, wherein at least one of said connector (2) and said counterpart (4;5) comprises a support structure (23) to support said locking arm (16).

3. Connector system (1) according to claim 2, wherein said locking arm (16) comprises at least a bent portion (B) in the direction of said support structure (23).

4. Connector system (1) according to any one of the preceding claims, wherein said locking arm (16) is shaped to contact said counterpart (4;5).

5. Connector system (1) according to any one of the preceding claims, wherein said system (1) comprises a spring member (34) adapted to exert a biasing force to said locking arm (16) forcing said locking arm (16) in said locked position.

6. Connector system (1) according to claim 5, wherein said spring member (34) is integrated with said locking arm (16).

7. Connector system (1) according to claim 5, wherein said spring member (34) is a separate spring element for said locking arm (16).

8. Connector system (1) according to any one of the claims 5-7, wherein said spring member (34) is further adapted to exert a biasing force perpendicular to a plane of said first and second rotating movement (R1,R2).

5 9. Connector system (1) according to any one of the preceding claims, wherein said first locking portion (17) comprises a hook portion with a first locking surface (31) and said second locking portion (22) comprises a second locking surface (32) adapted to abut said first locking surface (31)
10 in said locked position.

 10. Connector system (1) according to any one of the preceding claims, wherein said second locking portion (22) comprises a ramped surface (33,33A) adapted to guide a guiding surface (30) of said first locking portion (17) at least prior
15 to said first rotating movement (R1).

 11. Connector system (1) according to any one of the preceding claims, wherein said locking arm (16) protrudes from a housing (10,11,19) of said connector (2) to induce said second rotating movement (R2).

20 12. Connector system (1) according to any one of the claims 1-10, wherein said connector (2) comprises a housing (10,11,19) adapted to expose said locking arm (16) such that said locking arm (16) is available to induce said second rotating movement (R2).

25 13. Connector system (1) according to claim 11 or 12, wherein said housing (10,11,19) comprises a first space with an entry for a cable (3) and a second space accommodating a part of said locking arm (16).

 14. Connector system (1) according to claim 13,
30 wherein said second space is adapted to incorporate a pivot joint (18) of or for said pivotally supported locking arm (16).

 15. Connector system (1) according to any one of the preceding claims, wherein at least one of said connector (2)
35 and said counterpart (4) and said locking arm (16) are metallic.

 16. Connector system (1) according to claim 15, wherein said locking arm (16) comprises stainless steel.

17. Connector system (1) according to any one of the preceding claims, wherein said counterpart (4) comprises a metallic board connector housing mounted on a printed circuit board (7) having an entry (20) for said locking arm (16) to a receiving space (21) comprising said second locking portion (22).

18. Connector system (1) according to claim 17, wherein said entry (20) is part of an entry for said connector (2).

19. Connector system (1) according to claim 17 or 18, wherein said receiving space (21) further comprises at least one of said support structure (23) and said second locking surface (32) and said ramped surface (33,33A).

20. Connector system (1) according to claim 17, 18 or 19, wherein said board connector housing entry (20) comprises one or more ground springs (24) around said entry (20).

21. Connector system (1) according to any one of the claims 17-20, wherein said board connector housing entry (20) comprises one or more chamfered guiding walls (25) for said locking arm (16).

22. Connector system (1) according to any one of the claims 17-21, wherein said board connector housing (4) has a mating side for said connector (2), said mating side comprising at least one threaded hole (26).

23. Connector system (1) according to any one of the preceding claims, wherein said system (1) is adapted to allow manipulation of said locking arm (16) to re-rotate to said locked position.

24. Connector system (1) according to claim 23, wherein said support structure (23) comprises a support surface (23A') with an inclined orientation (α) to allow said locking arm (16) to re-rotate to said locked position.

25. Connector system (1) according to claim 23 or 24, wherein said system (1) is adapted to allow sideward movement of said locking arm (16) to allow said locking arm (16) to re-rotate to said locked position.

26. Cable connector (2) for use in a connector system (1) according to any one of the preceding claims comprising a housing (10,11,12,13) with at least housing part (10,11,12)

forming a first space with an entry for a cable (3) and second space (11,19) for said locking arm (16).

27. Cable connector (2) according to claim 26, wherein said second space is formed by a cover (19) attached to said housing part (11).

28. Counterpart (4) for use in a connector system (1) according to any one of the claims 1-25, wherein said counterpart is a board connector housing (4) with at least a portion (14) containing an entry for said cable connector (2) and an entry (20) to a receiving space (21) comprising said second locking portion (22).

29. Counterpart (4) according to claim 28, wherein said entry (20) to said receiving space (21) comprises one or more ground springs (24) around said entry (20).

30. Method for unplugging a connector (2) from a counterpart (4;5), said connector (2) having a pivotally supported locking arm (16) extending towards said counterpart (4;5) adapted to lock said connector (2) and said counterpart (4;5), comprising the steps of:

- unlocking said connector (2) by a rotating movement of said locking arm (16) from a locked position to an unlocked position;
- leaving said connector (2) in a plugged position with said locking arm (16) in said unlocked position without an actuating force being exerted on said locking arm (16);
- subsequent unplugging of said connector (2) from said counterpart (4;5).